

## CLAIMS

What is claimed is:

1. A metal wood golf club head adapted for attachment to a shaft comprising:  
a substantially hollow body welded to a stamped metal impact insert;  
the body including a heel portion, a toe portion, a crown portion, a sole plate, a skirt portion connecting the heel portion to the toe portion, and a face perimeter having an opening for receiving the stamped metal impact insert;  
an upper section of the face perimeter forming a transition junction with the crown portion, and a lower section of the perimeter face forming a junction with the sole plate; and  
the opening of the face perimeter a suitable distance from either of the transition junctions,  
thereby, substantially eliminating welding at the transition junctions.
2. The golf club head of claim 1, wherein the distance from either the crown or the sole plate transition junctions to the face perimeter is at least about 0.20 inches.
3. The golf club head of claim 1, wherein the distance from either the crown or sole plate transition junctions to the face perimeter is at least about 0.15 inches.
4. The golf club head of claim 2, wherein the face perimeter and the insert are substantially oval shaped.
5. The golf club head of claim 4, wherein the shell thickness of the face perimeter is approximately 0.80 inches.
6. The golf club head of claim 5, wherein the hollow cast body and the insert are made substantially of titanium or titanium based alloy.

BEST AVAILABLE COPY

BEST AVAILABLE COPY

7. The golf club head of claim 6, wherein the wall thickness of the insert is approximately 0.10 inches at its center and about 0.09 inches at its outer edge.
8. The golf club head of claim 7, wherein the insert comprises having at least two different radii of curvature for interior and exterior surfaces.
9. The golf club head of claim 1, wherein the size of the club head is between about 350 and 500 cubic centimeters.
10. The golf club head of claim 9, wherein the body and the insert are made from a titanium alloy.
11. The golf club head of claim 1, wherein the size of the club head is between about 270 and 450 cubic centimeters.
12. The golf club head of claim 11, wherein the body is substantially 6-4 titanium alloy and the insert is substantially 15-3-3-3 titanium alloy.
13. The golf club head of claim 12, wherein the wall of the insert has a uniform thickness of between about 0.100 inches and 0.125 inches.
14. The golf club head of claim 1, wherein the size of the club head is between about 230 to 350 cubic centimeters.
15. The golf club head of claim 14, wherein the wall of the insert has a uniform thickness between about 0.75 inches and 0.105 inches.
16. The golf club head of claim 14, wherein the club head loft is equal to or greater than 13°.

17. The golf club head of claim 16, wherein the wall of the insert has a uniform constant thickness of between about 0.05 inches and 0.09 inches.
18. The golf club head of claim 1, wherein the cast body includes a weight element disposed on the sole plate, in an area adjacent to the juncture of the heel and skirt portions.
19. The golf club head of claim 18, wherein the body has a generally cylindrical hosel extending from the heel portion, an extension of the hosel centerline axis having an intersection point with the sole plate.
20. The golf club head of claim 19, wherein the weight element is preferably centered on a point substantially rearward from the intersection point.
21. The golf club head of claim 20, wherein the center of the weight element is disposed at a distance greater than about 1.5 inches from the intersection point.
22. The golf club head of claim 20, wherein the center of the weight element is disposed at a distance greater than about 1.0 inches from the intersection point.
23. The golf club head of claim 20, wherein the weight element is greater than 12 grams and preferably greater than 16 grams.
24. A metal wood golf club head adapted for attachment to a shaft comprising:  
a substantially hollow body having a crown portion, a sole plate, a toe portion, a heel portion, a skirt portion having a juncture with the heel portion and a ball striking face extending therebetween,  
the body having a hosel extending from the heel portion for attachment to the shaft,  
the hosel having a centerline axis, an extension of which meets the sole plate at an intersection point,

[illegible][illegible]

1981 1982 1983  
 1984 1985 1986  
 1987 1988 1989  
 1990 1991 1992  
 1993 1994 1995  
 1996 1997 1998  
 1999 2000 2001  
 2002 2003 2004  
 2005 2006 2007  
 2008 2009 2010  
 2011 2012 2013  
 2014 2015 2016  
 2017 2018 2019  
 2020 2021 2022  
 2023 2024 2025  
 2026 2027 2028  
 2029 2030 2031  
 2032 2033 2034  
 2035 2036 2037  
 2038 2039 2040  
 2041 2042 2043  
 2044 2045 2046  
 2047 2048 2049  
 2050 2051 2052  
 2053 2054 2055  
 2056 2057 2058  
 2059 2060 2061  
 2062 2063 2064  
 2065 2066 2067  
 2068 2069 2070  
 2071 2072 2073  
 2074 2075 2076  
 2077 2078 2079  
 2080 2081 2082  
 2083 2084 2085  
 2086 2087 2088  
 2089 2090 2091  
 2092 2093 2094  
 2095 2096 2097  
 2098 2099 2100  
 2101 2102 2103  
 2104 2105 2106  
 2107 2108 2109  
 2110 2111 2112  
 2113 2114 2115  
 2116 2117 2118  
 2119 2120 2121  
 2122 2123 2124  
 2125 2126 2127  
 2128 2129 2130  
 2131 2132 2133  
 2134 2135 2136  
 2137 2138 2139  
 2140 2141 2142  
 2143 2144 2145  
 2146 2147 2148  
 2149 2150 2151  
 2152 2153 2154  
 2155 2156 2157  
 2158 2159 2160  
 2161 2162 2163  
 2164 2165 2166  
 2167 2168 2169  
 2170 2171 2172  
 2173 2174 2175  
 2176 2177 2178  
 2179 2180 2181  
 2182 2183 2184  
 2185 2186 2187  
 2188 2189 2190  
 2191 2192 2193  
 2194 2195 2196  
 2197 2198 2199  
 2200 2201 2202  
 2203 2204 2205  
 2206 2207 2208  
 2209 2210 2211  
 2212 2213 2214  
 2215 2216 2217  
 2218 2219 2220  
 2221 2222 2223  
 2224 2225 2226  
 2227 2228 2229  
 2230 2231 2232  
 2233 2234 2235  
 2236 2237 2238  
 2239 2240 2241  
 2242 2243 2244  
 2245 2246 2247  
 2248 2249 2250  
 2251 2252 2253  
 2254 2255 2256  
 2257 2258 2259  
 2260 2261 2262  
 2263 2264 2265  
 2266 2267 2268  
 2269 2270 2271  
 2272 2273 2274  
 2275 2276 2277  
 2278 2279 2280  
 2281 2282 2283  
 2284 2285 2286  
 2287 2288 2289  
 2290 2291 2292  
 2293 2294 2295  
 2296 2297 2298  
 2299 2300 2301  
 2302 2303 2304  
 2305 2306 2307  
 2308 2309 2310  
 2311 2312 2313  
 2314 2315 2316  
 2317 2318 2319  
 2320 2321 2322  
 2323 2324 2325  
 2326 2327 2328  
 2329 2330 2331  
 2332 2333 2334  
 2335 2336 2337  
 2338 2339 2340  
 2341 2342 2343  
 2344 2345 2346  
 2347 2348 2349  
 2350 2351 2352  
 2353 2354 2355  
 2356 2357 2358  
 2359 2360 2361  
 2362 2363 2364  
 2365 2366 2367  
 2368 2369 2370  
 2371 2372 2373  
 2374 2375 2376  
 2377 2378 2379  
 2380 2381 2382  
 2383 2384 2385  
 2386 2387 2388  
 2389 2390 2391  
 2392 2393 2394  
 2395 2396 2397  
 2398 2399 2400  
 2401 2402 2403  
 2404 2405 2406  
 2407 2408 2409  
 2410 2411 2412  
 2413 2414 2415  
 2416 2417 2418  
 2419 2420 2421  
 2422 2423 2424  
 2425 2426 2427  
 2428 2429 2430  
 2431 2432 2433  
 2434 2435 2436  
 2437 2438 2439  
 2440 2441 2442  
 2443 2444 2445  
 2446 2447 2448  
 2449 2450 2451  
 2452 2453 2454  
 2455 2456 2457  
 2458 2459 2460  
 2461 2462 2463  
 2464 2465 2466  
 2467 2468 2469  
 2470 2471 2472  
 2473 2474 2475  
 2476 2477 2478  
 2479 2480 2481  
 2482 2483 2484  
 2485 2486 2487  
 2488 2489 2490  
 2491 2492 2493  
 2494 2495 2496  
 2497 2498 2499  
 2500 2501 2502  
 2503 2504 2505  
 2506 2507 2508  
 2509 2510 2511  
 2512 2513 2514  
 2515 2516 2517  
 2518 2519 2520  
 2521 2522 2523  
 2524 2525 2526  
 2527 2528 2529  
 2530 2531 2532  
 2533 2534 2535  
 2536 2537 2538  
 2539 2540 2541  
 2542 2543 2544  
 2545 2546 2547  
 2548 2549 2550  
 2551 2552 2553  
 2554 2555 2556  
 2557 2558 2559  
 2560 2561 2562  
 2563 2564 2565  
 2566 2567 2568  
 2569 2570 2571  
 2572 2573 2574  
 2575 2576 2577  
 2578 2579 2580  
 2581 2582 2583  
 2584 2585 2586  
 2587 2588 2589  
 2590 2591 2592  
 2593 2594 2595  
 2596 2597 2598  
 2599 2600 2601  
 2602 2603 2604  
 2605 2606 2607  
 2608 2609 2610  
 2611 2612 2613  
 2614 2615 2616  
 2617 2618 2619  
 2620 2621 2622  
 2623 2624 2625  
 2626 2